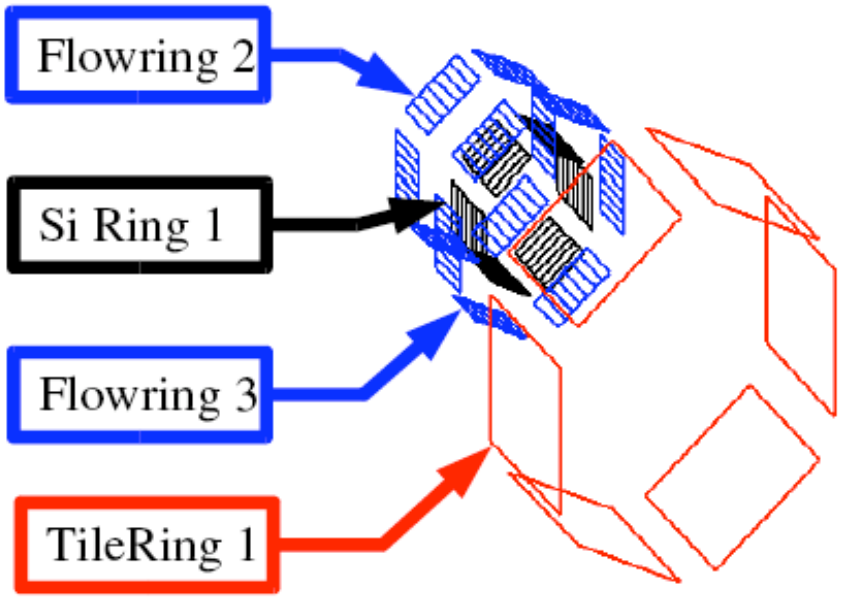
Elliptic Flow

Status of analysis being done by Eric Johnson.

(See: http://www4.rcf.bnl.gov/~ebj/FlowDoc/)

$$\frac{d^3N}{2\pi\, p_T dp_T dy d(\phi-\Psi_R)} = \frac{d^2N}{2\pi\, p_T dp_T dy}\left(1+\sum_n 2\, v_n \cos\left[n(\phi-\Psi_R)\right]\right)$$

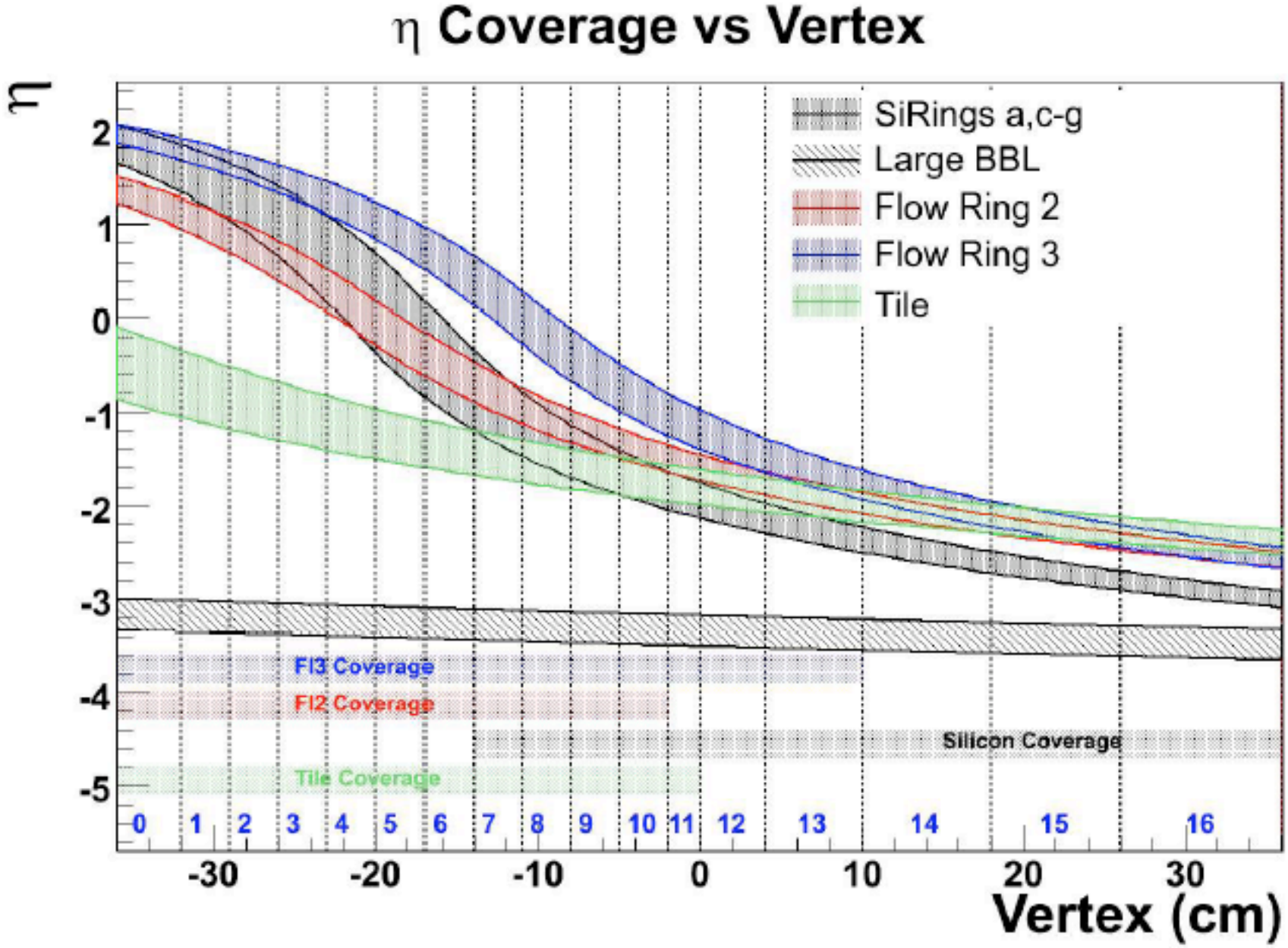


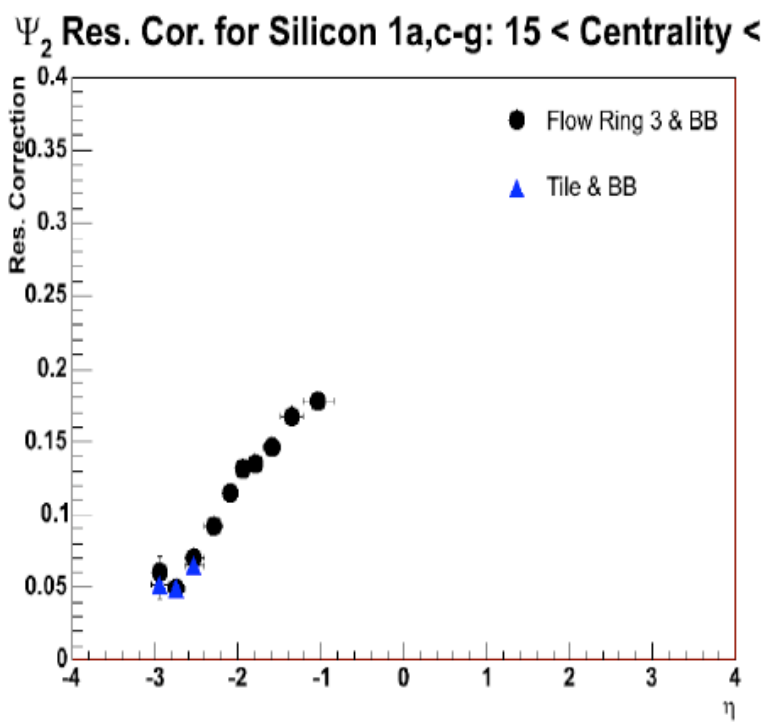
$$v_n = \langle \cos(n[\phi-\Psi_R]) \rangle$$

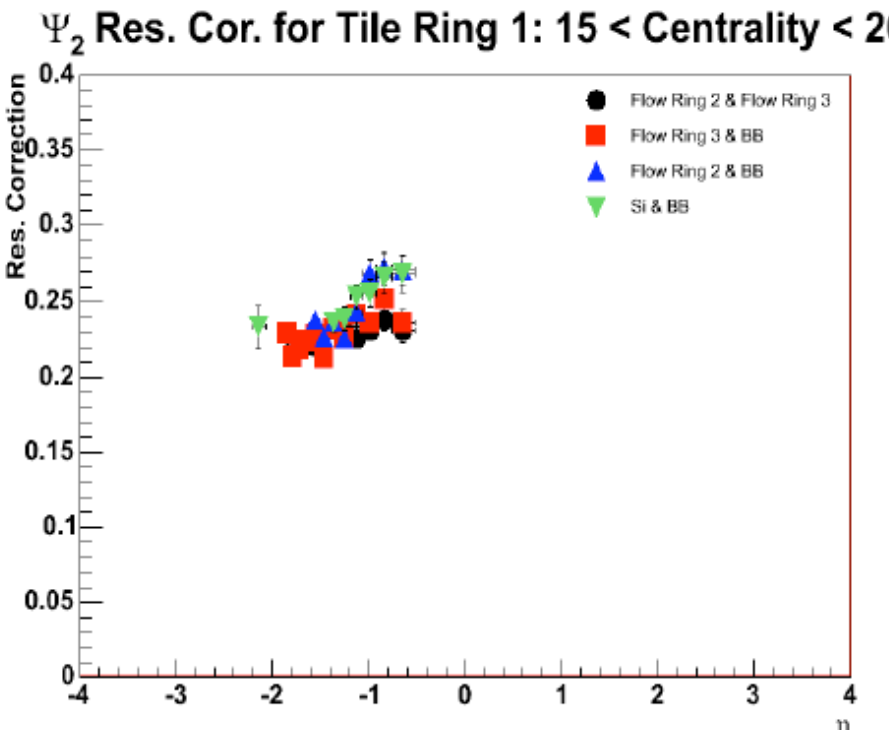
$$\Psi_n = \frac{1}{n}\sum_i \frac{w_i \sin(n\phi_i)}{w_i \cos(n\phi_i)}$$

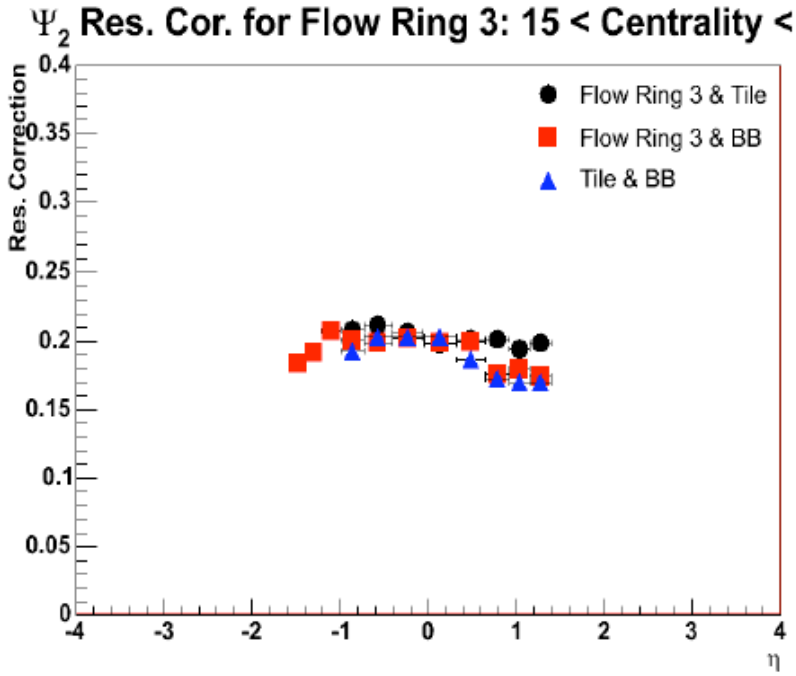
$$v_n' = \frac{\langle \cos(n[\phi-\Psi_2]) \rangle}{ResCor}$$

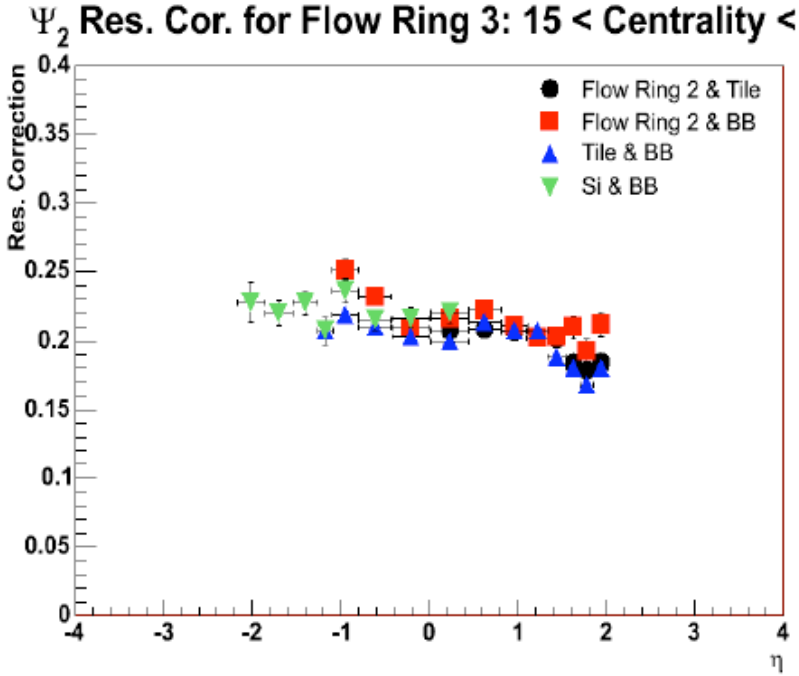
$$ResCor\ of\ Detector\ a = \sqrt{\frac{\langle \cos(2.0[\Psi_2^a-\Psi_2^b]) \rangle \cdot \langle \cos(2.0[\Psi_2^a-\Psi_2^c]) \rangle}{\langle \cos(2.0[\Psi_2^b-\Psi_2^c]) \rangle}}$$

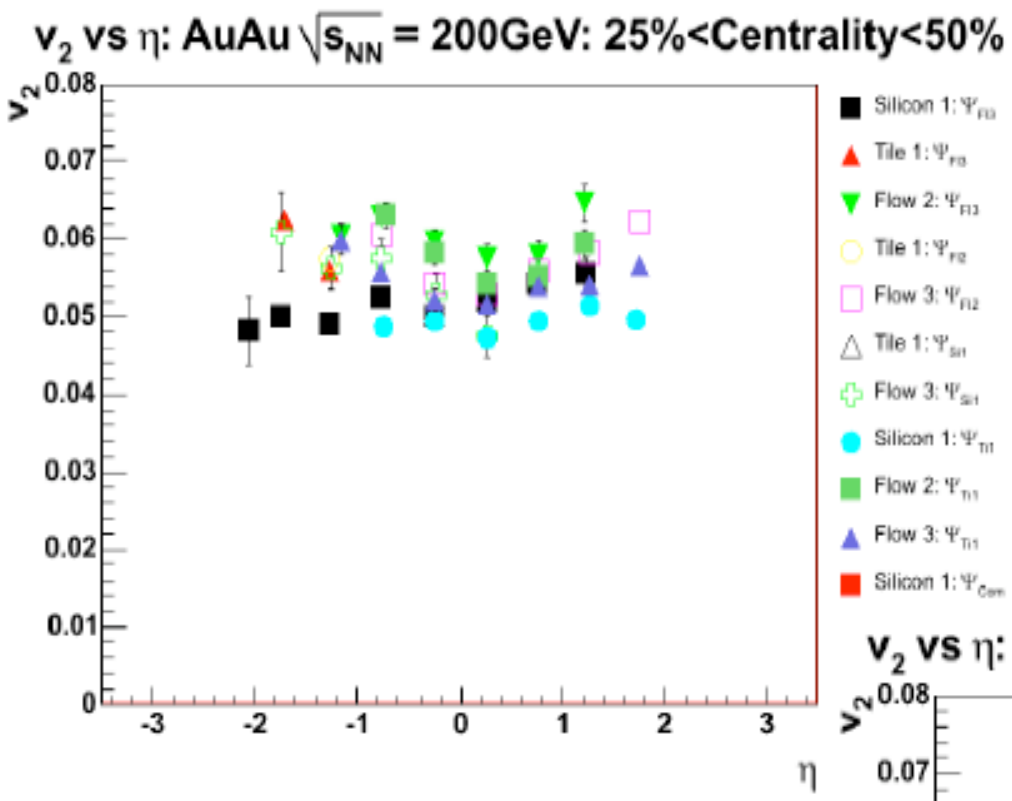

η Coverage vs Vertex
η
SiRings a,c-g
Large BBL
Flow Ring 2
Flow Ring 3
Tile
FI3 Coverage
FI2 Coverage
Silicon Coverage
Tile Coverage
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
2
1
0
-1
-2
-3
-4
-5
-30 -20 -10 0 10 20 30
Vertex (cm)

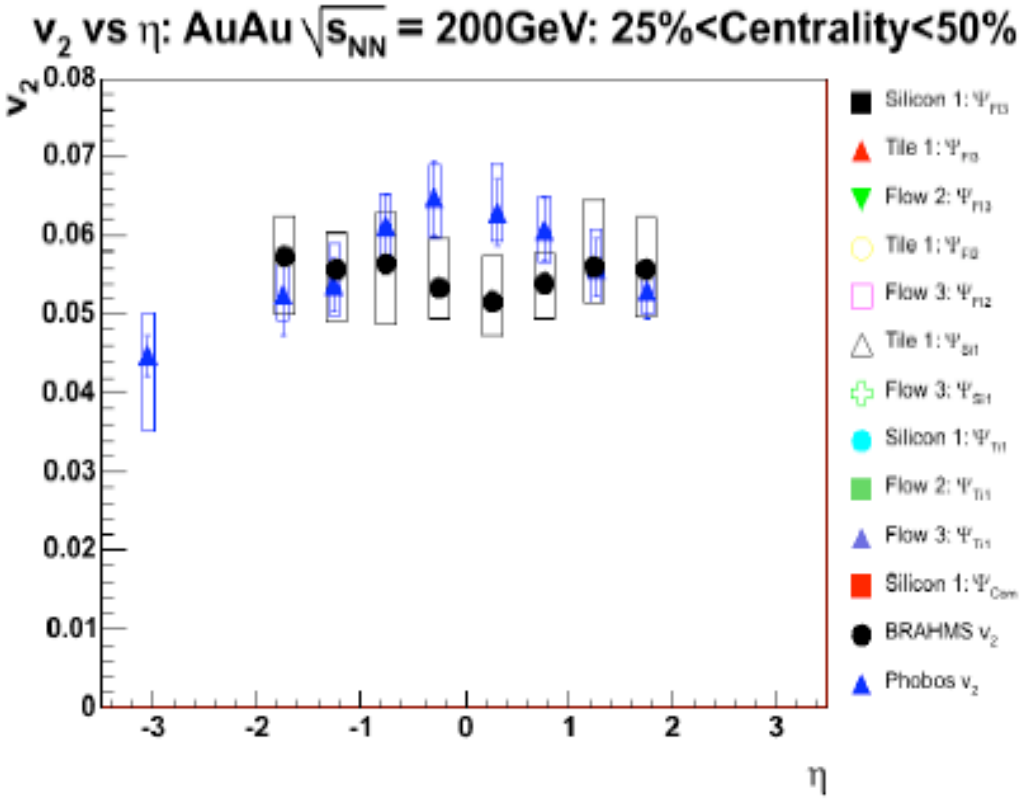

Ψ_2 Res. Cor. for Silicon 1a,c-g: 15 < Centrality < 20
Res. Correction
Flow Ring 3 & BB
Tile & BB
η

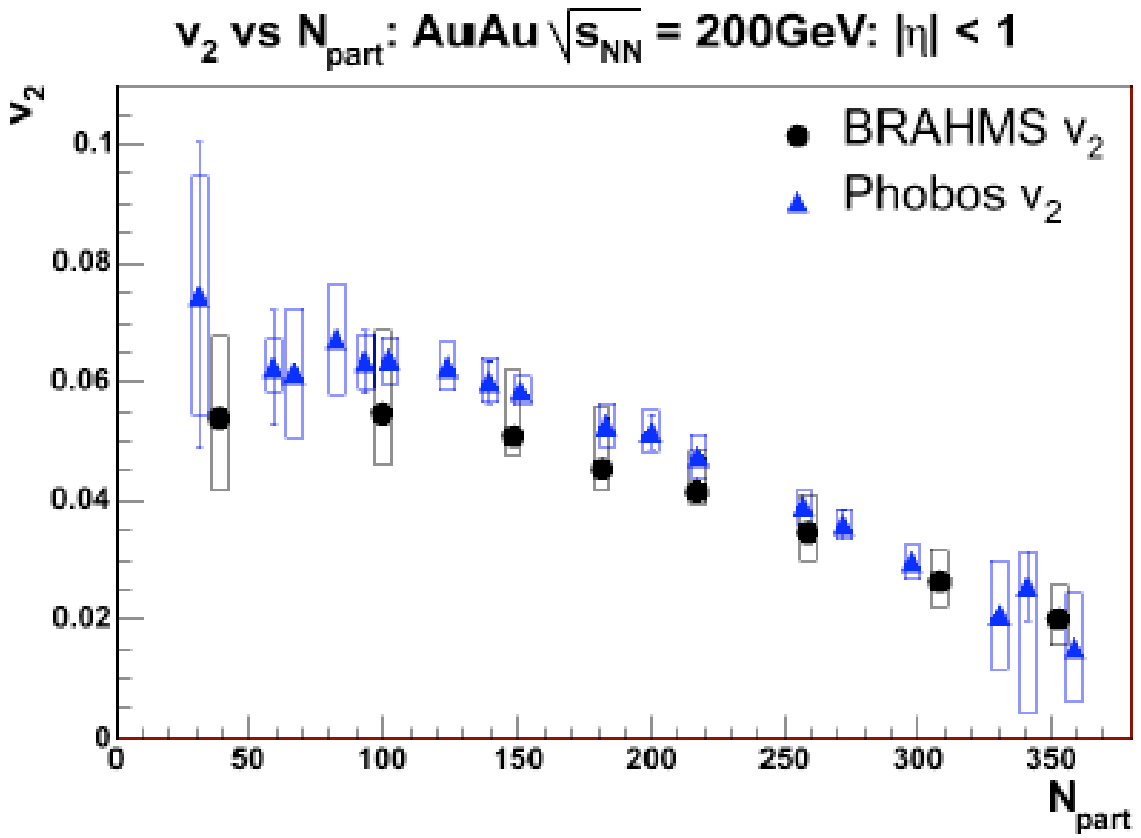

Ψ_2 Res. Cor. for Tile Ring 1: 15 < Centrality < 20
Res. Correction
Flow Ring 2 & Flow Ring 3
Flow Ring 3 & BB
Flow Ring 2 & BB
Si & BB
η


Ψ_2 Res. Cor. for Flow Ring 3: 15 < Centrality < 20
Res. Correction
Flow Ring 3 & Tile
Flow Ring 3 & BB
Tile & BB
η


Ψ_2 Res. Cor. for Flow Ring 3: 15 < Centrality < 20
Res. Correction
Flow Ring 2 & Tile
Flow Ring 2 & BB
Tile & BB
Si & BB
η


v_2 vs η: AuAu $\sqrt{s_{NN}}$ = 200GeV: 25%<Centrality<50%
v_2
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-3
-2
-1
0
1
2
3
η
Silicon 1: Ψ_{FT3}
Tile 1: Ψ_{FT0}
Flow 2: Ψ_{FT3}
Tile 1: Ψ_{FT2}
Flow 3: Ψ_{FT2}
Tile 1: Ψ_{SiT}
Flow 3: Ψ_{SiT}
Silicon 1: Ψ_{TiT}
Flow 2: Ψ_{TiT}
Flow 3: Ψ_{TiT}
Silicon 1: Ψ_{Com}


v_2 vs η: AuAu $\sqrt{s_{NN}}$ = 200GeV: 25%<Centrality<50%
v_2
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-3
-2
-1
0
1
2
3
η
Silicon 1: Ψ_{FT3}
Tile 1: Ψ_{FT0}
Flow 2: Ψ_{FT3}
Tile 1: Ψ_{FT2}
Flow 3: Ψ_{FT2}
Tile 1: Ψ_{SiT}
Flow 3: Ψ_{SiT}
Silicon 1: Ψ_{TiT}
Flow 2: Ψ_{TiT}
Flow 3: Ψ_{TiT}
Silicon 1: Ψ_{Com}
BRAHMS v_2
Phobos v_2


v_2 vs N_{part}: AuAu $\sqrt{s_{NN}}$ = 200GeV: $|\eta| < 1$
v_2
0.1
0.08
0.06
0.04
0.02
0
0
50
100
150
200
250
300
350
N_{part}
BRAHMS v_2
Phobos v_2